**Work on super vaccines**

2195. SHRI SURESH PACHOURI: Will the PRIME MINISTER be pleased to state:

(a) whether a genetically engineered hapatitis B-virus vaccine has been developed abroad; if so, what are the details thereof; and

(b) whether any work in this new field has been undertaken in this country; if not, whether it is proposed to undertake any such research work in the field of super-vaccines which are under development abroad?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI K. R. NARAYANAN): (a) Yes, Sir. A genetically engineered Hepatitis-B virus sub-unit vaccine has been developed and produced using the microorganism yeast. This vaccine called 'Hepatovax' has been approved for commercial sale in USA and some other countries. Based on results obtained so far, the genetically engineered vaccine appears comparable to the plasma derived Hepatitis-B vaccine.

(b) No, Sir. It is proposed to initiate R&D work towards producing genetically engineered Hepatitis B vaccine in Indian Laboratories such as National Institute of Virology, National Institute of Immunology and All India Institute of Medical Sciences.

**Research and development work on monochlonal antibodies**

2196. SHRI SURESH PACHOURI: Will the PRIME MINISTER be pleased to state:

(a) whether Government are aware that monochlonal antibodies, specific for curing heart cancer, have been developed in some countries; if so, what are the details thereof;

(b) whether any similar research and development work is under way in this country; and

(c) what is the estimated number of cancer cases in this country and in the world and what is our annunal expenditure in research and development for cancer?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI K. R. NARAYANAN): (a) No, Sir.

(b) No, Sir.

(c) The estimated number of cancer cases in India is 1.5 million and it is estimated that 5.9 million people are affected by cancer every year throughout the world.

The Indian Council of Medical Research has an outlay of Rs. 150 lakhs for the year 1987-88 on research and development for cancer.

**University Industry co-ordination in the country**

2197. SHRI SURESH PACHOURI: Will the PRIME MINISTER be pleased to state:

(a) whether Government are aware that Biotechnology revolution in the West has been possible due to university-industry co-ordination; and

(b) whether a similar co-ordination between ICAR|CSIR|ICMR etc. and the industry exists in the country; if not, what are the reasons therefor and corrective steps proposed/taken ?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE

(SHRI K. R. NARAYANAN): (a) and (b) Yes, Sir, ICAR|CSIR|ICMR are having some interaction with the industries for introducing promoting and validating technologies and products in biotechnology. These agencies especially CSIR and the Deptt. of Biotechnology are making necessary efforts to improve interaction with the industries, particularly through seminars, workshops etc. These interactions will become greater as more progress is being made through indigenous research for development of new products and technologies in the areas of industry medicine, agriculture, energy and environment through emerging new biotechologies.

**Monitoring of Budget deficit**

2198. SHRI GHULAM RASOOL MATTO: Will the Minister of FINANCE be pleased to state:

(a) what is the final Budget Deficit computed for the year 1985-86;

(b) what is the final Budget deficit computed for the year 1986-87 and if it has not been computed, what are the revised estimates of this budget deficit for the year 1986-87; and

(c) whether on the basis of the three months working of the year 1987-88, the Government is confident of keeping the deficit at the level projected in the Budget Speech and what type of monitoring is being done and what steps are being taken to ensure that this deficit will remain within the Budgetary provisions?

THE MINISTER OF STATE IN THE DEPARTMENT OF EXPENDITURE IN THE MINISTRY OF FINANCE (SHRI B. K. GADHVI): (a) The year 1985-86 closed with a budgetary deficit of Rs. 4937 crores. This is exclusive of Rs. 1628 crores of loans given to State Governments to clear their overdraft.

(b) The actual deficit for the year will be known only after the Accounts for 1986-87 are closed. The deficit envisaged in the revised estimates for 1986-87 amounted to Rs. 8285 crores, which is inclusive of Rs. 1200 crores of loans advanced to Food Corporation of India to finance buffer stocks of foodgrains which were earlier financed by bank credit.

(c) The deficit at any particular point during the course of the year is not an indicator of the eventual year and deficit. Government is, however, keeping a close watch over the budgetary position and instructions have been issued to Ministries/Departments to observe strict budgetary control.

**Indian Air Force Accidents**

2199. SHRI SURESH KALMADI: Will the Minister of DEFENCE be pleased to state:

(a) what is the number of Indian Air Force accidents which have taken place during the last one year and what were the causes;

(b) what is the number of Indian Air Force aircrafts which have been lost due to bird hits during the same period; and

(c) what steps are being taken to avoid such accidents?

THE MINISTER OF STATE IN THE DEPARTMENT OF DEFENCE PRODUCTION AND SUPPLIES IN THE MINISTRY OF DEFENCE (SHRI SHIVRAJ PATIL): (a) Information regarding the number of accidents or their causes during a particular period is classified, and cannot be divulged in the public interest.

(b) Some aircraft were lost during the last year due to bird hits.

(c) The major causes of air accidents have been identified to be human error, technical defects and bird strikes. A number of steps have been taken to reduce accidents due to these causes which is an on-going process. Some of them are given below:—

*Human errors*

The important remedial measures taken to reduce human error accidents are:—

(i) The training pattern has been modified and a new syllabbi has been introduced with emphasis on advanced operational training exercises.

(ii) The training syllabbi have been reviewed in depth to ensure that junior